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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,542	10/06/2003	Xiaohui Hao	137741UL	3324
23446	7590	09/29/2005	EXAMINER	
MCANDREWS HELD & MALLOY, LTD			JAWORSKI, FRANCIS J	
500 WEST MADISON STREET			ART UNIT	PAPER NUMBER
SUITE 3400			3737	
CHICAGO, IL 60661				

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/679,542	HAO ET AL.
	Examiner	Art Unit
	Jaworski Francis J.	3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-40 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 June 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiao et al (US6375618), further in view of Phillips et al (US6241674). The former teaches a method for conducting harmonic imaging using *inter alia* a mis-matched filtering approach providing partial filtering for de-coding and compression (col. 7 lines 55-65, col. 9 lines 49-63) and including FM techniques and which is characterizable as 'without using a matched decoding and compressing filter', and otherwise teaches transmission of coded and phase-inverted coded pulses and coherent summation of

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same, including spatially distinct, separate path as well as collinear beams per col. 13 item 7, but does not specifically discuss time-bandwidth product.

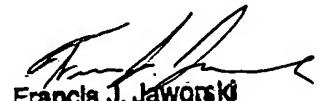
Phillips et al in first interpretation teaches that conventional uncoded harmonic imaging includes time-bandwidth products of 'about one' see col. 4 lines 58-60, hence technically the phase shifting practiced during conventional contrast harmonic production discussed in the Chiao et al patent col. 3 top portion would be a form of 'coding' on transmit and in association with a time-bandwidth product of about one per the Phillips et al teaching. Alternately stated, the Examiner is maintaining that 'greater than about 1' language in the base claim overlaps in the literal sense with 'about one' or the conventional range as stated in Phillips et al.

Phillips et al in a second interpretation teaches that coding decompression – filtering compression typically encompasses a range well exceeding 'about 1', see col. 7 lines 46-59 and therefore Chiao et al practiced under the 'without using...filter' interpretation would be expected to operate in such a time-bandwidth product range.

It appears that the sidelobe suppression towards which the Chiao et al mismatched filtering is directed is inter alia compensatory for propagation effects of the transmit pulse inside tissue, see Chiao et al col. 8 lines 19-24. Additionally Phillips et al col. 15 top advise to model transmission and filtering based upon pulse propagation inside of tissue.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.

FJJ:fjj 09252005



Francis J. Jaworski  
Primary Examiner